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ABSTRACT

The preservation of school safety should be a primary commitment of all educators. This paper presents findings of a study that examined school facility safety in 27 Georgia schools. Data were gathered from a survey of 9 elementary, 11 middle, and 7 high schools in south Georgia. The surveys elicited information related to both school-site safety and school-building safety. Respondents assessed the condition of their school buildings with a school-building evaluation instrument. The data show a significant relationship at the .05 level between school safety and school-building age for the middle schools. The relationship between the school-building safety score and school-building age was found to be statistically significant for middle and elementary schools at the .10 level. The general rating for school-facility safety was above average, except in areas such as corridors, parking lots, and playgrounds. Four tables are included. (Contains 8 references.) (LMI)

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Running head: PHYSICAL ENVIRONMENT AND STUDENT SAFETY

Physical Environment and Student Safety in South Georgia Schools

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Physical Environment and Student Safety in South Georgia Schools

Student safety in schools has been a main concern for school administrators. According to Christiansen (1987), 45% of the children's accidental death and 57% of their accidental injuries were school related. Therefore, ensuring student safety in schools is a pressing demand from parents and should be a primary commitment of educators.

Safety issues in schools are manifold. They vary from environmental issues to school violence (Christiansen, 1987). In this study, the main focus was on school facility safety which was examined in two major areas: school site safety and school building safety. School site safety covered the school location, the playground, the equipment, the site drainage and all outdoor school facilities. Safety in school building was mainly concerned with the structure, the fire protection, the means of egress, the emergency exits and all the school building systems.

A recent survey of school facilities in the United States (Wilce, 1994) has revealed many deteriorating school buildings in need of repair and renovation. Older school facilities fail to meet many safety standards of modern time because of building code upgrades. Therefore, it is not difficult to associate unsafe elements with older school buildings.

Statement of the Problem

The purpose of this study was to examine the safety issue in south Georgia schools in the following aspects: (1) Is there a relationship between school safety and school building age in south Georgia schools? (2) What are the major areas of safety concern of school buildings in south Georgia? (3) What are the major areas of safety concern of school sites in south Georgia?

Procedures

Twenty-seven conveniently sampled schools, consisting of nine elementary schools, eleven middle schools and seven high schools, in sixteen school systems in south Georgia were involved in the study. The age of a school building was defined by the year of its original construction. All school buildings were evaluated by a school building evaluation instrument designed by Dr. Thomas Morgan, Professor Emeritus of Auburn University. Responses to evaluation items relating to school site safety were grouped separately from those relating to school building safety. The means of these responses were converted to a 100% scale for analysis.

Analysis

Having carefully examined the questionnaire responses and comments, the researchers determined that any safety area under a score of 80 would be classified as an area of safety concern. School safety scores, both school site scores and school building scores, were also examined in terms of their relationship with their corresponding school building ages. The Pearson correlation method was used to statistically analyze the relationship between the school safety score and the school building age.

Findings

The findings of this study are summarized in the following:

(1) The relationship of school site safety score and school building age was found to be statistically significant in the middle school level at .05. No significant relationship was found in the high school and elementary school levels (see Table 1).

(2) The relationship of school building safety score and school building age was found statistically significant in the middle and elementary school levels at .10. No significant relationship was found in the high school level (see Table 2).

(3) In school site safety, danger created by rainwater puddles on playgrounds, walkways, and parking areas was identified by school staff of all levels as significant. Other school site items of significant safety concerns were playground surface, playground equipment, crosswalks, and fencing at different levels (see Table 3).

(4) In school building safety, the area of significant concern was cited on the blockade of emergency exits and corridors. Other significant areas of safety concern were exit signs and communication systems (see Table 4).

Discussion

The findings of this study lead to the following points of interest worthy of further discussion:

(1) About half of the middle school buildings in this study were modern buildings constructed in recent years per middle school program specifications while the other half were buildings converted from previous high school buildings. This study has disclosed the differences between these two types of middle school buildings in terms of functions and characteristics. Statistical analyses have indicated the relationship of school safety and school building age in all areas in the middle school level.

(2) The findings of the study revealed a significant concern over the corridor safety of school buildings in all levels. This corridor issue is two folded. First was the blockade of corridors by furniture, water fountains, fire extinguisher cases, snack and drink machines, and lockers which

were actually placed in the corridor after these school buildings were originally constructed. Second was the seemingly narrow hallway because of continuous addition to the original school building. Little attention was given to the impact of additional traffic flow on the existing school building.

(3) The safety of the classroom exit was rated low in many responses with notes showing that these classrooms had only one exit door. These evaluations were probably made while overlooking the installation of sprinkler system and fire escape windows in these classrooms. Therefore, the researchers conclude that the finding in this category was invalid.

(4) It is interesting to find out that some schools especially at the elementary level do not have two way communication systems between the office and the classrooms. This lack of communication between the classroom and the office could become a safety problem in case of emergencies. The surveillance system that is currently installed in all Georgia schools for communication and supervision does not cover the classroom areas.

(5) Most of the schools studied have indicated drainage problems at the school site, especially in parking areas, walkways and play fields. While water puddles because of poor drainage, the safety of the building users is intimidated. Since the correction of the drainage problem is both extensive and expensive, closer supervision should be exercised in the initial installation of outdoor facilities to ensure positive drainage at the beginning.

(6) Most schools do not have any master planning of their school campus. As a result, facilities were added on later as a matter of convenience without much consideration of the

general safety and efficiency. This can be seen in many examples of the study: Driveways constructed between school buildings and outside play areas located right next to the classrooms.

(7) In recent years, increased children injury on the playground has brought the playground safety issue to the attention of school administrators. This study further confirmed the concern of school staff over the safety of school playground and play equipment. Many playgrounds in this study were reported to have rough surfaces with debris all over and no provision for falling zones. Playground equipment in many schools was found to have unsafe features and lacking maintenance. Many school systems all over the country have identified problem areas on the playground and have started their inspection and maintenance programs. The great expense of equipment replacement and playground upgrade needs to be estimated and budgeted.

Conclusion

School facility safety is the priority concern of school administrators who could not afford the liability of children injury in school. Findings in this study represent the educators' concern of the safety problems in the school physical environment. The general rating on school facility safety was above average except in some highlighted areas such as corridors, parking lots and playgrounds. An action plan needs to be developed immediately to identify and address these unsafe conditions. Finally, it is the school administrators' responsibility to oversee that these plans are speedily implemented. One child injured is one too many.

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APPENDICES

	School Site Safety Scores		
	High School	Middle School	Elementary School
School Building Age	r = .1735	r = .9442 **	r = .2110

Table 1: Correlation Coefficient - * Significant at .10 level
** Significant at .05 level
School Building Age and School Site Safety

	School Building Safety Scores		
	High School	Middle School	Elementary School
School Building Age	r = .4426	r = .5562 *	r = .6340 *

Table 2: Correlation Coefficient - * Significant at .10 level
School Building Age and School Building Safety

Table 3: School Site Safety Scores - by question and by school level

Questions	Reference	High School	Middle School	Elementary School	Maximum
1	Playground Surface	73 *	55 *	25 *	100
2	Playground Surface	80	65 *	58 *	100
3	Playground Separation	92	67 *	89	100
4	Playground Equipment	90	49 *	49 *	100
5	Traffic	89	59 *	80	100
6	Traffic View	91	89	91	100
7	Crosswalks & drives	80	54 *	66 *	100
8	Sidewalks & streets	90	81	86	100
9	Industrial Hazards	96	95	93	100
10	Environmental Disturbances	91	90	88	100
11	Parking Areas & Walkways	69 *	66 *	50 *	100
12	Air Flight Pattern	100	86	94	100
13	Fencing	67 *	85	67 *	100
14	Inclement Weather Protection	80	70 *	71 *	100

* Indicates area of safety concern.

Questions:

1. Are the playground, game and practice area surfaces in condition for use soon after rain?
2. Is the playing surface comparatively free from hazards?
3. Are play areas sufficiently separated?
4. Is playground equipment safe?
5. Are approaches to the school comparatively free from traffic hazards?
6. Is the view of oncoming traffic at corners and intersections unobstructed?
7. Is the site free from hazards of crosswalks and drives?
8. Are sidewalks, streets, and roads traversed by pupils on their way to school improved?
9. Is the site removed from industrial hazards?
10. Is the site located in a place free from odors, dirt, noise, and industrial gases?
11. Do walks and parking areas remain free from puddles after rain?
12. Is the site outside of the approach patterns of any airport?
13. Are there safety fences where necessary?
14. Are students comparatively free from exposure to inclement weather throughout the day?

Table 4: School Building Safety Scores - by question and by school level

Questions	Reference	High School	Middle School	Elementary School	Maximum
1	Stairways	100	97	93	100
2	Appropriate corridors & exits	80	85	91	100
3	Corridor Blockade	65 *	55 *	52 *	100
4	Corridor bottlenecks	67 *	75 *	96	100
5	Room exits	93	67 *	64 *	100
6	Hazardous free exits	96	91	93	100
7	Exit signs	94	95	78 *	100
8	Fire Control Provisions	91	87	82	100
9	Non-combustable Materials	91	73 *	91	100
10	Fire Hazard Elimination	100	90	93	100
11	Building Structure	93	85	80	100
12	Service Systems	93	84	80	100
13	Floor Safety	83	94	85	100
14	Appropriate Lighting	95	85	87	100
15	Communication System	85	91	72 *	100
16	Fuel Handling	96	92	90	100

* Indicates area of safety concern.

Questions:

1. Are stairways safe?
2. Are corridors and exits sufficient in number, properly located, and large enough?
3. Are corridors free from projections and sharp corners?
4. Are corridors and stairways free from "bottlenecks" in pupil traffic?
5. Are room exits safe?
6. Are building exit doors free from hazards?
7. Are exit doors well marked?
8. Are facilities provided for fire control?
9. Is the interior of the building free from inflammable materials and equipment?
10. Is the hazard of fire eliminated as far as possible in construction of the building?
11. Is the building structurally sound?
12. Are pupils protected against hazards arising from service systems?
13. Are floors free from projections and slippery surfaces?
14. Are all classrooms, special rooms, corridors, and other areas properly lighted?
15. Is there an efficient communication system in the building?
16. Does the building construction facilitate the delivery, storage and handling of fuel?